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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,492	10/30/2001	Joseph John Sumakeris	5308-223	5639

20792 7590 08/07/2003

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 08/07/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,492

Applicant(s)

SUMAKERIS ET AL.

Examiner

Ram N Kackar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-30 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,17-26, 29-30 and 43-45 is/are rejected.
- 7) ☒ Claim(s) 15,16,27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-30 in Paper No. 11 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 24 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In this instance the claim recites a liner which could be assembled without disassembly of the susceptor, while it is disclosed in the specification (Page 7 lines 29-30) that at least one liner is fastened with a fastener and it appears that the other may require at least some partial disassembly.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3-5, 8, 13, 17-18, 21-23, 29, 43 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Kordina et al (US 5695567) as evidenced by Jancosek et al (US 4845332).

Kordina et al disclose a heating device configured for 1500°-1700 °C (Col 5 line 16) comprising a susceptor portion (Fig 5), a conductor portion or a platter (16, 17), EMF generator operable to induce eddy currents in the susceptor to heat the device (18) and conductor portions to conduct heat (16, 17), susceptor parts made of graphite coated with silicon carbide (Col 5 lines 49-65).

Regarding eddy currents in the susceptor only, and substantially no eddy current in the conductor portion, the depth of the eddy current and resultant inductive heating is a function of operating parameters like frequency of EMF, relative permeability and resistivity of the susceptor material. The eddy current in general therefore will be much less in the conductor portion compared to the susceptor as explained by (See teaching reference Jancosek et al US 4845332 Col 5 lines 5-33). The structure disclosed by Kordina et al is therefore inherently capable of this intended use.

6. Claims 1-5, 8-10, 12, 17 and 21- 23 are rejected under 35 U.S.C. 102(a) and 102 (e) as being anticipated by Kong et al (US 6217662).

Kong et al disclose a heating device configured for 1300-1800 (Col 2 line 52) comprising a susceptor portion (Fig 7-57), a conductor portion (54), EMF generator operable to induce eddy currents in the susceptor to heat the device (Fig 2-45, 46) and conductor portion to conduct heat (Fig 7-54), susceptor and conductor parts made of graphite coated with silicon carbide (Col 6 lines 10-16).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 24-25 and 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kordina et al (US 5695567).

Kordina discloses all the limitations of this claim except that the liners are removable without disassembly of the susceptor. However making elements of an apparatus separable has been held obvious *In re Dulberg* 129 USPQ 148 (CCPA 1961).

Regarding claim 30, Kordina does not disclose the liner to be of variable thickness but discloses tapered passage for gas (Col 5 lines 1-4), which is art-recognized equivalent as it modifies the gas passage in the same way and is precisely for the claimed purpose.

Therefore it would have been obvious to substitute the taper of Kordina for tapered thickness liner.

9. Claim 6, 7 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kordina et al (US 5695567) in view of Holzlein et al (US 6406983).

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Kordina et al disclose susceptor of graphite coated with silicon carbide but do not disclose coating of tantalum carbide.

Holzlein et al disclose a coating of tantalum carbide in their inductive heating device (fig 1 and Col 7 lines 28-45).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to coat the susceptor by tantalum carbide so as to prevent migration of carbon to gas stream.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kong et al (US 6217662) in view of Holzlein et al (US 6406983).

Kong et al also disclose conductor portion of graphite coated with silicon carbide but do not disclose coating of refractory metal carbide.

Holzlein et al disclose a coating of tantalum carbide in their inductive heating device (fig 1 and Col 7 lines)

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to coat the susceptor by tantalum carbide so as to prevent migration of carbon to gas stream or any other object in contact with the susceptor.

11. Claims 14, 17-20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kordina et al (US 5695567) in view of Frijlink et al (US 4860687).

Kordina et al do not disclose a platter region and an opening in the liner

Frijlink et al disclose an opening and a platter for holding a substrate for rotation (abstract and Fig 5a and 5b).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to have an opening and platter so as to be able to provide rotation to the substrate for uniformity of deposition.

Allowable Subject Matter

12. Claims 15, 16, 27 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims are allowable because second liner is claimed to be in two separable parts, which define an opening. This limitation is not disclosed or suggested in the prior art.

Response to Amendment

13. Applicant's arguments filed 06/26/2003 have been fully considered but they are not persuasive.

Applicant argues that the amendment added to claim 1 (d) makes it distinguish over prior art and further argues that in Kordina no teaching exists to suggest that RF field may be controlled to substantially reduce eddy current in the conductor portion to zero. In a similar way applicant argues against the Kong reference also. Examiner disagrees.

This limitation is basically same as in 1(c) and has been already considered and found not patentable. As explained above, the teaching that RF field may be controlled is inherent and explained very well by (Jancosek et al US 4845332 Col 5 lines 5-33).

Regarding claim 7 applicant argues that it would not have been obvious to modify Kordina to have a coating of TaC in view of the fact that the susceptor does not come in contact

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with gas stream in the chamber. This argument is not persuasive because the conductor plates do not cover all the surfaces of the susceptor.

Regarding claims 14 and 19 applicant's argument that no opening in liner is disclosed is not persuasive because there are openings at least related to gas inlets.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK
August 6, 2003


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
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